Virtual Machine Migration Approach in Cloud Computing Using Genetic Algorithm

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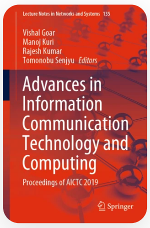

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Gursharanjit Kaur & Rajan Sachdeva

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Abstract

The technology of cloud computing is decentralized in nature due to which various issues in the network get raised which reduce its efficiency. The cloud computing technology is applied to fulfill the demands of hosts over the internet. For the purpose of using or sharing, the resource cloud computing can be used. The virtual machine migration is the major issue of cloud computing, and it gets raised when uncertainty get happened in the network. Due to extensive use of the virtual machine resources, machine gets overloaded which increase delay for the cloudlet execution. In the base paper, the threshold algorithm has been proposed which assign task to most capable machine and hosts maintain checkpoints on the virtual machines. When the virtual machine get overloaded, the task needs to migrate to another VM (Virtual Machine). In this study, weight-based technique will be proposed which migrate cloudlet from one virtual machine to another.

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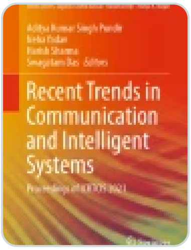

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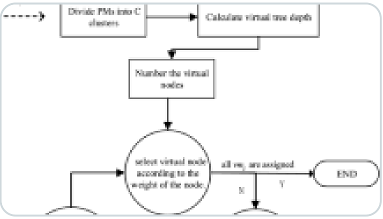
Divide PMs into C clusters
Calculate virtual tree depth
Number the virtual nodes
select virtual node according to the weight of the node
all vm are assigned
END
N
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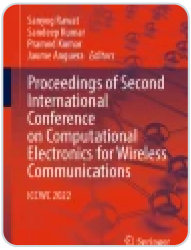
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References

1. Barron C, Yu H, Zhan J (2013) Cloud computing security case studies and research. In Proceedings of the world congress on engineering 2

   Google Scholar

2. Guo W, Wang X (2013) A data placement strategy based on genetic algorithm in cloud computing platform. In 10th web information system and application conference

   Google Scholar

3. Gowri G, Amutha M (2014) Cloud computing applications and their testing methogology. Int J Innov Res Comput Commun Eng 2906–2914

   Google Scholar

4. Gupta R (2014) Review on existing load balancing techniques of cloud computing. Int J Adv Res Comput Sci Softw Eng 4(2)

   Google Scholar

5. Wang T, Liu Z, Chen Y, Xu Y (2014) Load balancing task scheduling based on genetic algorithm in cloud computing. In IEEE 12th international conference on dependable, autonomic and secure computing

Google Scholar

6. Singh A, Juneja D, Malhotra M (2015) Autonomous agent balancing algorithm in cloud computing. Procedia Computer Science International Conference on Advanced Computing Technologies and Applications (ICACTA) 45, 832–841 (2015)

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7. Wang J, Zhao Z, Xu Z, Hu Z, Li L Guo Y (2015) I-sieve: An inline high performance deduplication system used in cloud storage. Tsinghua Sci Technol 17–27

Google Scholar

8. Karki S, Goyal A (2018) Performance evaluation of check pointing and threshold algorithm for load balancing in cloud computing. Int J Comput Sci Eng 6(5):2347–2693

Google Scholar

9. Kaur S, Sengupta J (2017) Load balancing using improved genetic algorithm(iga) in cloud computing. Int J Adv Res Comput Eng Technol (IJARCET) 6(8), 2278–1323

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10. Bei W, Li J (2016) Load balancing task scheduling based on multi-population genetic algorithm in cloud computing. In: Proceedings of the 35th chinese control conference 27–29

Google Scholar

11. Pilavare MS, Desai A (2015) A novel approach towards improving performance of load balancing using genetic algorithm in cloud computing. In: IEEE sponsored 2nd international conference on innovations in information embedded and communication systems, ICIIECS'15

Google Scholar

12. Gai K, Qiu M, Zhao H (2015) Cost-aware multimedia data allocation for heterogeneous memory using genetic algorithm in cloud computing. IEEE Trans Cloud Comput

Google Scholar

13. Mahalingam NN (2015) Efficient load balancing in cloud computing using weighted throttled algorithm. Int J Innov Res Comput Commun Eng 3:5409–5415

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